

WMD Proliferation, Globalization, and International Security: Whither the Nexus and National Security?

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Introduction

Throughout the 1990s, the United States national security establishment gradually espoused the idea of a growing threat posed by the proliferation of a variety weapons and weapons technologies that could cause mass casualties to combatants and noncombatants alike. Nuclear weapons had long occupied the rhetorical space used by policy makers to describe weapons that could kill on a mass scale, but gradually the result was that the term “weapons of mass destruction” was reinvigorated and quickly became an accepted term in the lexicon of national security policy. The term is believed to have surfaced in the media in the aftermath of the German bombing of Guernica, the Basque seat of power, in April 1937. It reappeared periodically during World War II in reference to the indiscriminate killing of civilians by aircraft.^[1] Today, the term is defined in U.S. Code Title 50 as “any weapon or device that is intended, or has the capability, to cause death or serious bodily injury to a significant number of people through the release, dissemination, or impact of toxic or poisonous chemicals or their precursors; a disease organism; radiation or radioactivity.”^[2] For the purposes of this analysis, the term is defined as weapons that can inflict mass casualties on combatants and noncombatants using nuclear and radiological devices, long range missiles, and lethal chemical- and biological agents.^[3]

Arguably, the kick-off to the more recent formal shift in emphasis in the U.S. national security bureaucracy came in September 1993 when President Clinton told the United Nations General Assembly:

One of our most urgent priorities must be attacking the proliferation of weapons of mass destruction, whether they are nuclear, chemical or biological; and the ballistic missiles that can rain them down on populations hundreds of miles away... If we do not stem the proliferation of the world's deadliest weapons, no democracy can feel secure.^[4]

Following the speech, President Clinton signed Presidential Directive 18, which ordered the Department of Defense to develop a new approach in addressing the proliferation of weapons of mass destruction. At the time of the initiative, the United States was particularly concerned with the prospect of thousands of unsecured nuclear warheads in the former Soviet republics—the problem of “loose nukes.”

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In late 1993, Secretary of Defense Les Aspin voiced concern about the prospect that scientists from Russia's nuclear programs would be available for hire around the world. More generally, Aspin noted that "[t]he other new development that exacerbates today's proliferation problem is a by-product of growth in world trade and the rising tide of technology everywhere. The world economy today is characterized by an ever increasing volume of trade leading to ever greater diffusion of technology. Simply put, this will make it harder and harder to detect illicit diversions of materials and technology useful for weapons development."^[5]

The 1990s then saw the United States and the international community buffeted by a variety of seemingly contradictory forces. On the one hand, the prospect of great power conflict declined with the end of the Cold War; on the other, the international community seemed increasingly splintered by conflict stemming from the fragmentation of states around the globe. The world seemed to be coming together and breaking apart all at the same time, a process described by the political scientist James Rosenau as "framgmentation"^[6] and by Benjamin Barber as "Jihad vs. McWorld."^[7]

Ten years after President Clinton addressed the United Nations about the emerging WMD threat, the Bush Administration drew upon some of the same metaphors in describing a dark new security environment in the aftermath of the September 11th attacks. In the foreword to the 2002 National Security Strategy report, President Bush stated: "...shadowy networks of individuals can bring great chaos and suffering to our shores for less than it costs to purchase a single tank. Terrorists are organized to penetrate open societies to turn the power of modern technologies against us." The prospect of these networks gaining access to mass destructive technologies arguably constitutes the pre-eminent security challenge facing the United States, according to the document. In a poignant and oft-cited passage, the report noted: "The gravest danger our Nation faces lies at the crossroads of radicalism and technology. Our enemies have openly declared that they are seeking weapons of mass destruction, and evidence indicates that they are doing so with determination. The United States will not allow these efforts to succeed."^[8]

The purpose of this paper and of those that follow in this issue of *Strategic Insights* is to explore the relationship between WMD proliferation and the post-cold war security environment as it is described in the scholarly literature on globalization. Implicit in the Bush and Clinton Administrations' assertions regarding the emerging threat from WMD is a new "nexus of networks" in which a burgeoning host of radical extremists prepared to use violence have facilitated access to mass destructive technologies. The "intersection of radicalism and technology" effectively implies that today terrorist networks and hostile states can potentially interact with global flows of technology and information transfers in order to gain access to destructive technologies more easily than previously was the case. However, it's not just that terrorist networks and hostile states can gain access to these weapons by tapping into global flows. Some scholars assert that powerful emerging global networks associated with organized crime, money laundering, nuclear smuggling, human trafficking, drug smuggling, and other nefarious activities are providing terrorist organizations with new vehicles to ply their trade.^[9] In short, the "nexus of networks" provides hostile non-state actors with the ability to effectively free ride on a global backbone of illicit trade that can potentially be used to traffic in mass destructive weapons and/or technologies.

Dire predictions about a dark future aside, assertions about an impending nexus of networks as it applies to WMD proliferation among state and non-state actors need to be placed in proper context. Many scholars and proliferation experts dismiss as hyperbole assertions made by the Bush Administration and others that there exists a dangerous new era in WMD proliferation.^[10] Many believe that weapons proliferation remains the purview of states and that immense hurdles remain for non-state actors either to acquire and/or manufacture mass destructive weapons for use as an instrument of terrorism. This is certainly the case for the assembly of nuclear weapons, which requires a significant level of infrastructure consisting of labor, money, and research/testing facilities. To date, there have been remarkably few incidents of non-state actors mounting attacks

using chemical, biological, nuclear or radiological agents. The March 1995 sarin attack by the Japanese group Aum Shinrikyo on the Tokyo subway system, which resulted in 10 deaths, is regarded by many as the dawn of the era of modern WMD terrorism. Despite significant funding and extensive infrastructure, Aum never successfully weaponized biological agents, which led it to shift emphasis to production of chemical agents. Other groups have followed in Aum's footsteps. Law enforcement and counter-terrorism operations have broken up attempts by Islamic extremist groups to weaponize ricin in London (January 2003) and cyanide in Rome (February 2002). Groups affiliated with al Qaeda are known to be undertaking active efforts to acquire nuclear, chemical, and biological agents, and there have been repeated but unconfirmed reports that al Qaeda has attempted to purchase nuclear warheads in Central Asia.^[11]

Arguably, however, the most critical and imminent proliferation threat of the 1990s came not from terrorists but from a WMD supply network based in a state, and which took advantage of offshore procurement and production possibilities afforded by global economic integration and interdependence. The global procurement and production network administered out of Pakistan by the scientist A.Q. Khan produced and delivered nuclear centrifuges and centrifuge designs to Iran and Libya, and it is believed that Khan approached Iraq in the early 1990s offering his services to Saddam Hussein. Khan is also believed to have cooperated with North Korea on ballistic missile programs, and some believe that cooperation extended to the nuclear arena.^[12]

The implications of attempts by non-state actors to obtain WMD and the activities of the A.Q. Khan network raise a series of interesting questions for scholars and policy professionals working on nonproliferation issues. The issues suggested in these questions will all be addressed to some extent in the papers that follow:

1. How will the forces of globalization and growing salience of non-state actors affect the problem of WMD proliferation?
2. Do the revelations from the A.Q. Khan network that spanned the globe portend a new proliferation environment or, alternatively, does the situation represent "new wine in old bottles?"
3. What do we know about existing proliferation cases, and can an examination of these cases lead to some generalizable conclusions about the nature of the proliferation problem today?
4. What particular problems face states seeking to manage the proliferation environment, and what steps are proliferant actors taking to evade detection?
5. Adoption of denial and deception techniques
6. Hardened, deeply buried targets
7. Intelligence collection
8. What steps can states and/or collections of states take to manage the proliferation environment?

Globalization as a Security Paradigm

Whether they realized it or not, policymakers in the Clinton and Bush Administrations gradually came to place the problem of weapons proliferation in the context of what various scholars identified as an emerging global security paradigm that had a number of critical and interrelated elements:

- The identification of security threats stemming from state- and non-state actors flouting generally accepted international behavioral norms or rule sets;
- A realization that major interstate conflicts are increasingly deterred by the destructive capability of modern military technology, while intra-state conflicts involving insurgencies or ethnic conflicts are on the rise;

- An implicit acceptance of the idea that states do not necessarily have the untrammelled right to pursue their security if it means the acquisition of weapons of mass destruction and maintaining relationships with non-state terrorist groups;
- A recognition that structural changes in the international system are making it more difficult for states and their export control regimes to control the flow of people, technology, and money;
- The growing importance of non-state actors as vehicles pushing global interdependence at the local, state, and international levels;
- The growing security problem faced by states from non-state actors taking advantage of the seams and gaps created by accelerating global political, economic, and cultural integration.
- Growing doubts over the ability of the nation-state to be the exclusive provider of national security.[13]

Literature describing a purported paradigm shift away from an international system controlled mainly by states is now regarded as part of the school of "globalization," defined by the *Oxford Companion of Politics* as "...as a process (or set of processes) which embodies a transformation in the spatial organization of social relations and transactions, expressed in transcontinental or interregional flows and networks of activity, interaction, and power." [14] Some scholars suggest that globalization may in fact constitute an ascendant paradigm, or framework, through which we may describe and analyze the international system. [15] To be sure, claims about the dawn of a new security paradigm surrounding globalization are rejected by realist scholars who assert that security in the international system remains fundamentally about states' pursuit of security and the dynamic of that activity which resonates throughout, causing actors to seek a balancing series of alliances in a constantly changing series of political relationships. Interestingly, while the literature abounds with healthy debate between the "realists" and the "globalizers," comparatively little work examines the implications of globalization as it pertains to international security. [16] This paper and the essays that follow attempt to bridge some of that gap.

There are many definitions of globalization that describe the increased global flows of people, money, and technology throughout the international system supported in part by the Internet and the global revolution in information and communications technology. Globalization has economic, political, military, and cultural dimensions, as noted by political scientists T.V. Paul and Norrin Ripsman in their useful operationalization of the concept:

"...the operation of businesses on a global, rather than a national level; the ease with which individuals and groups can communicate and organize across national frontiers; the global transmission of ideas, norms, and values that might erode national cultures in favor of a broader global culture; the increasing participation of states in international political, economic, and military organizations; the spread of particular forms of political institutions, such as representative democracy, to vast areas of the globe; and the increasing participation of individuals from multiple countries in INGOs. Globalization, therefore, is a vast and multi-faceted enterprise." [17]

The processes described by Paul and Ripsman also broadly affect international security and the way in which actors pursue individual and collective security. Perhaps the most comprehensive treatment on this issue is provided by David Held, et al., in *Global Transformations: Politics, Economics, and Culture* [18]. In this work, the authors usefully document the difficulties encountered by states in coping with intensifying local rivalries during the 1990s as well as the increasing integration of global arms markets spurred by the diffusion of military technology around the world. As outlined by the authors, the ubiquitous nature of technology diffusion in both the military and non-military sectors simply makes it inevitable that violent non-state actors will gain access to mass destructive capabilities.

Much of the literature on globalization points to the states' increasing difficulty in policing burgeoning global flows of people and information. A central belief of the globalization school is that states no longer constitute the defining element of the international system, and that their authority, boundaries, and ability to exert a preponderant influence are being eroded by the processes of globalization. Some scholars go so far as to assert that the era of the state-based international system that came into being at the Peace of Westphalia in 1648 is now drawing to a close. For example, Jessica Mathews dramatically asserted in a 1997 article:

The absolutes of the Westphalian system-territorially fixed states where everything of value lies within some state's borders; a single, secular authority, each territory and representing it outside its borders; and no authority above states-are all dissolving. Increasingly, resources and threats that matter, including money, information, pollution, and popular culture, circulate and shape lives and economies with little regard for political boundaries. International standards of conduct are gradually beginning to override claims of national or regional singularity. Even the most powerful states find the marketplace and international public opinion compelling them more often to follow a particular course.[19]

Others, while acknowledging that states are becoming less important actors, posit that a de facto system of global norms and governance is taking shape at the sub-governmental level (as opposed to the non-governmental level) as a result of interrelationships among government bureaucracies around the world. Anne-Marie Slaughter suggested in 1997 that the state is in fact "...disaggregating into its separate, functionally distinct parts. These parts-courts, regulatory agencies, executives, and even legislatures-are networking with their counterparts abroad, creating a dense web of relations that constitutes a new, transgovernmental order." [20] Slaughter's characterization of the evolution of sub-state governmental structures suggests that a de facto global governing order is in fact coming into being through formal and informal networks among government bureaucracies.

Other interesting variations on the same theme abound. One of the most interesting of these surrounds the assertion that the declining role of the state in regulating international affairs is recreating circumstances like those which existed during medieval times. Proponents of so-called "neomedievalism" argue that competing transnational networks and power structures are all combining to undermine the position of the state. A leading scholar in this area, Philip Cerny, argues that neomedievalism constitutes a dynamic and fluid environment in which:

...we are increasingly in the presence of a plurality of overlapping, competing, and intersecting power structures-institutions, political processes, economic developments, and social transformations-above, below, and cutting across states and the states system. States today represent only one level of this power structure, becoming more diffuse, internally split, and enmeshed in wider complex webs of power. This structure is fluid and fungible, feeding back and undergoing continual adjustments and ad hoc responses to a rapidly changing environment. In this context, the definition of what is a 'security' issue is also becoming more fluid and fungible—including the dislocations caused by economic development; the destabilizing effect of transitions to democracy; the undermining of traditional cultures, beliefs, and loyalties; threats to the environmental and public health; and the like.[21]

Consistent with this description, some scholars argue that certain parts of the globe are already slipping away from state control, even geographic areas within states. These areas are referred to as "states within states," or ungoverned areas within states, where local control is provided by gangs and other ad hoc structures. For example, Robert Kaplan has written extensively on the descent into anarchy of certain parts of Western Africa and other parts of the world.[22] Other observers point out that non-state forces are providing a de facto governing order in urban environments like Kingston, Jamaica.[23] The wider environment associated with this

phenomenon leads some to argue that the whole idea of territoriality associated with states in which borders reflect effective divisions is open to question.^[24]

To be sure, arguments about the decline of the nation-state are nothing new and are rejected by many leading scholars.^[25] But as far as WMD proliferation is concerned, there is little question that national security decisionmakers over the last decade have grown increasingly uneasy over the ability of multilateral export control regimes to control the spread of dangerous technologies to hostile state- and non-state actors. The lack of confidence in the export control regimes is cited by some as a major factor in the Bush Administration's formulation of an aggressive new national security strategy in 2002, which called for the use of force in a wider number of circumstances to eliminate threats before they matured and threatened the American homeland.^[26] This lack of confidence was also inextricably linked to a belief that actor rationality and deterrence no longer operated with the same sort of predictability as in the Cold War, and that an age of unrestricted warfare had arrived—a view confirmed by the 9/11 attacks.

Proliferation, Globalization, and the National Security Dilemma

Regardless of where one comes out in the debate between the realists and the globalizers on the structure of the international system and the impact on international security, it is clear that policy professionals and politicians have voiced growing concern over the ability of the state to control and counter WMD proliferation. A variety of factors that seem immutably connected with the processes of globalization have contributed to this feeling of insecurity.

1. Interactions between state and non-state entities within the international system are occurring at a faster pace. The movement of information, technology, people and money—globalization—is an immutable force that only promises to continue its acceleration. Data will only become more compressed, processing speeds will continue to increase, and as a result, technology will become more widely available to an increasing range of actors. It is becoming increasingly difficult for states to develop mechanisms to keep pace with these global information and technology flows.

2. Non-state forces are exerting an increasingly powerful force in the international system. These forces seem largely impervious to the dominant state actors in the international system. Multinational corporations and non-governmental organizations are likely to continue their inexorable spread around the world, moving technology and information into heretofore undeveloped and underdeveloped geographic regions. Terrorist organizations also remain ingrained in the international environment, and it could be argued that various organizations have become truly global in character. Al Qaeda, for example, is franchising operations around the world either directly or indirectly, with these operations showing interest in mounting mass casualty attacks using unconventional weapons.

3. The unfettered flow of content, goods, money, and people has produced an environment in which new measures of instability and insecurity may be needed for states to appropriately apportion resources and policy instruments. States have traditionally used a series of indicators to define instability, such as physical violence requiring the deployment and use of military force. As noted by Cerny, today's environment and the threats to security in the environment are much more complicated. A key facet of the environment is that states are no longer necessarily the major conduit nor controller of global flows, and it is clear that hostile non-state organizations are exploiting the uncontrolled underbelly of globalization drawing upon malignant flows and processes as life-cycle sustaining inputs. Some of these flows are effectively invisible to the state but are no less threatening than the physical manifestations of instability that are traditionally used to as indicators of insecurity. In other words, nefarious global flows have become a de facto indicator of instability that need to be addressed by states. It seems likely that these nefarious global flows are being diverted into virtual and geographic "holes" in the international system and

are being drawn upon as life-cycle sustaining inputs by a plethora of hostile actors to support various forms of physical violence and instability in support of their objectives.

States therefore face a series of dilemmas in responding to the challenges of such an environment. States face difficulty in identifying when uncontrollable global flows are likely to emerge and which of these flows are malignant. Given such uncertainty, states face the complicated task of knowing when to attempt regulation and how to structure regulation regimes to limit malignant flows. A difficult decision faces states on making the decisions on when, whether, and how to regulate, since attempting regulation can drive flows underground, thereby further complicating detection efforts. For example, states wish to limit global flows that support WMD proliferation, cognitive and material support for terrorist organizations, human trafficking, and money laundering. But they face the double-edged sword of driving these networks into the offshore and black market, where detection and interdiction effectively become more difficult. To be sure, states are aided by the proliferation of sub-state governmental networks that are cooperating to alert each other to flows, but the task is enormous.

States face other contradictions in managing burgeoning global flows, since they must embrace globalized flows to remain economically viable and to ensure continued economic growth. The problem is that this same embrace exposes the state to malignant stocks, flows, and processes and attempts to regulate them only force the flows into the black market/offshore world where instruments of state power cannot effectively reach. Violent non-state actors and armed groups have exploited this new security dilemma. Flows supporting malignant activities can now ride shotgun on free-port flows and exploit black markets which arise as a result of regulation attempts.

Such an environment creates serious problems for states trying to control WMD proliferation. Searching for relevant information becomes more difficult in an environment where powerful market forces are overwhelming regulatory regimes and exerting inexorable forces pushing states away from structured multilateral regulation. Moreover, given the explosion in the movement of content and technology by different organizations, those actors that wish to mask their malignant flows find it to be immeasurably easier.

States face an enormous data collection and management problem in trying to unveil malignant flows supporting nefarious activities like WMD proliferation. In the U.S. government security bureaucracy, for example, the revolution in information, surveillance, and reconnaissance, or ISR, has resulted in a virtual waterfall of information being downloaded into government data processing centers. These bureaucracies are struggling to keep pace to file, sort, and analyze the deluge of information being delivered by an array of new sensors. The ability of humans to digest the information, figure out what information is meaningful, and then present that information to policymakers is a central challenge facing the United States as it seeks to meet the challenge of controlling proliferation.

The Past as Prologue

It is worth noting that the suggestion that globalization has altered the proliferation landscape in new and dangerous ways also needs to be placed in a particular context. It is clear that nationally-run procurement networks have to a certain extent always existed and helped states acquire WMD capabilities. The proliferation business in the post-World War II era has been in no small measure a function of the broader internationalization of the defense production business. It is also clear that procurement networks operated by countries such as Iran, Iraq and Pakistan have proven flexible and remarkably effective in delivering some, if not all, of the desired capabilities denied to them by international export control regimes. Most of the research to date on state-driven networks focuses on state actors acquiring nuclear technology in circumvention of international export control regimes. Moreover, it is worth noting that illicit transfers of nuclear materials came amidst a nuclear technology transfer system set up under the Atoms for Peace

Program, which served an important function for states seeking to acquire nuclear reactors that formed the basis for efforts to build a supply of fissile material. Proliferation can be said to have occurred in three phases: vertical, horizontal, and subnational.^[27]

Vertical Proliferation: Transfer of nuclear weapons and weapons and missile technology from a nuclear weapons state or from a nuclear supplier group country to a less industrialized non-weapons state.

Examples include:

- The Atoms for Peace Program (Highly Enriched Uranium Fueled Research Reactors);
- U.S. to France (Indirect);
- France to Israel, Iraq, Pakistan;
- France to India (Heavy water production);
- Soviet Union to PR China;
- China to Pakistan, DPRK, Iran, Algeria, Brazil, Argentina, India (Heavy Water), Saudi Arabia (CSS-2 Missiles);
- Russia supplied LEU fuel to Tarapur reactor in India, missile components to India, Iran, Brazil, contravening its obligations to the NSG, Missile Technology Control Regime, respectively; and
- Russia, Ukraine, Belarus (Indirect) to Iran, Libya.

Horizontal proliferation: Transfer of nuclear weapons and missile technology from a non-nuclear weapons state possessing a clandestine weapons program to another non-weapons state.

Examples include:

- Brazil, Argentina to Egypt, Iraq (suspected);
- Japan to Libya (Uranium Conversion plant);
- DPRK to Pakistan, Iran, Libya, Syria, Yemen;
- Pakistan to Iran, DPRK, Libya.

Third-Tier Proliferation: Transfer of nuclear weapons and missile technology from a weapons state or from a non-weapons state possessing a clandestine WMD program to a subnational group or terrorist organization.

Could happen through:

- Acquisition of weapons from unprotected military stockpile in a weapons state;
- Take-over of weapons stockpile of a failed state with a WMD program under crisis situation;
- Deliberate transfer to a smuggling organization or to a terrorist organization (in a different country) for use against a third party country while maintaining deniability.

Third-Tier Proliferation is considered the most dangerous current threat to U.S. national security.

Procurement networks used by a variety of actors have served as important vehicles for states to acquire different capabilities in each of the proliferation patterns outlined above. First, they've clearly made acquisition of proscribed weapons and materials possible by determined actors. While there has not yet been a high-profile chemical or biological weapons network akin to the A. Q. Khan network, the success of his efforts is a testament to the outcome of individuals willing to sell dangerous technologies with very few questions asked. History suggests that these

procurement networks can make the detection of WMD acquisition problematic. While the world has not yet seen the recreation of Aum Shinrikyo's international procurement effort backed by an equally elaborate production infrastructure, can states really be confident that another non-state group will not attempt a similar effort at indigenous production? Then there is the issue of non-state actors' purchase of existing mass destructive weapons, which remains a critical concern in Central Asia and elsewhere.

Conclusion

Whether one accepts the dire prognostications of the Bush Administration over the inevitability of a new attack by terrorists using WMD, the fact remains that globalization has complicated the security challenges faced by states as they seek to maintain some semblance of control over the security environment. Tracking and countering WMD proliferation constitutes just one aspect of the complicated security dilemma facing states in a globalizing international system. History suggests that states have already successfully adopted complicated procurement systems to circumvent multilateral export control regimes, and it is likely they will continue to do so in the future. It stands to reason that non-state actors may too master this problem.

The complications of this environment are not going away, since states will continue to be pushed towards the inexorable "race to embrace." At this point, it is manifestly unclear whether states can effectively regulate global flows of technology, particularly those related to dual-use applications. The state response to the challenges of tracking malignant global flows and the potential migration of these activities into "holes" outside state control is arguably the major intelligence collection and detection challenge facing states in trying to adjust to the globalizing environment and to preserve the ability of the state to act as an effective instrument of national security.

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24. Peter Andreas, "[Redrawing the Line: Borders and Security in the Twenty-first Century](#)," *International Security* 28, No. 2 (Fall 2003): 78-111.
25. One of the latest and most comprehensive of these treatises is offered by John Mearsheimer, *The Tragedy of Great Power Politics* (New York: Norton, 2001).
26. James J. Wirtz and James A. Russell, "[U.S. Policy on Preventive War and Pre-Emption](#)," *The Nonproliferation Review*, Spring 2003.
27. A generally accepted framework of proliferation in the post World War II era. See the [Nuclear Threat Initiative](#) website at for an example. The succeeding examples of the proliferation typologies are drawn from the NTI database. A recent and comprehensive treatment of this is contained in Chaim Braun and Christopher Chyba, "Proliferation Rings: New Challenges to the Nuclear Nonproliferation Regime," *International Security* 29, No. 2, (Fall 2004), 5-49.